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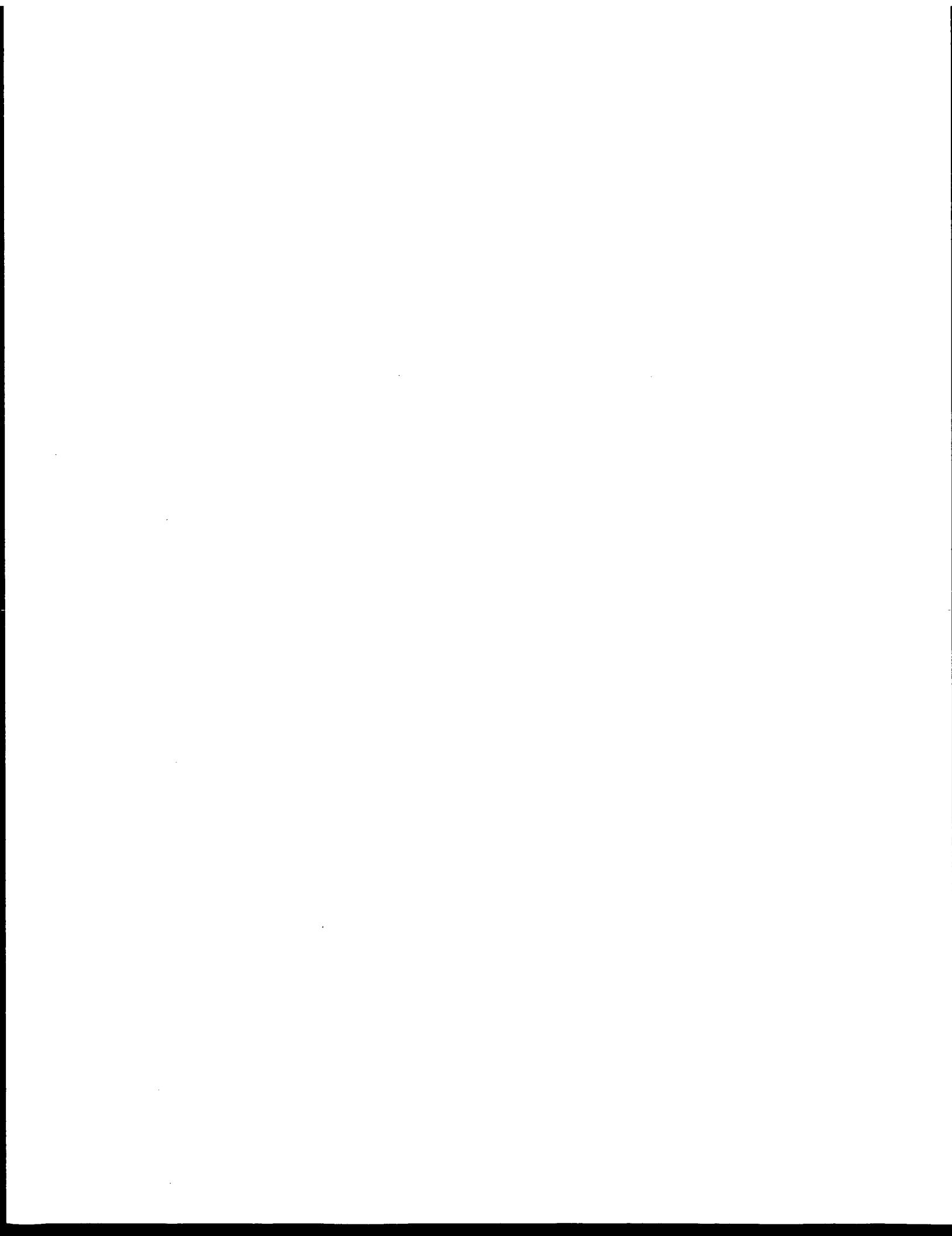
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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

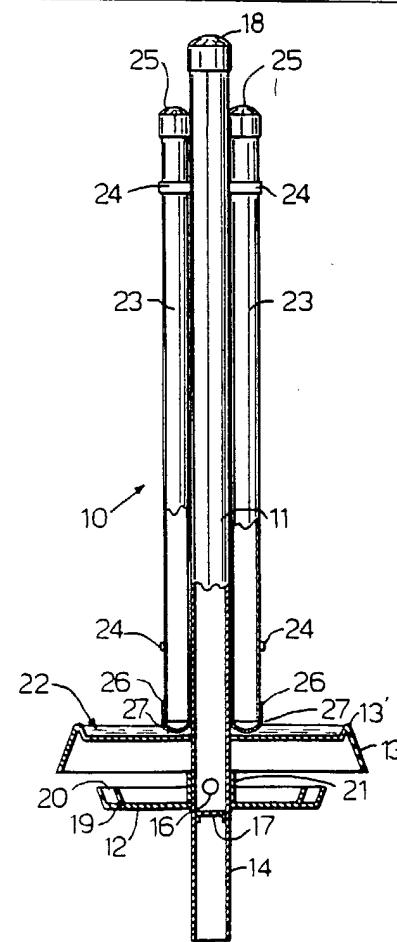
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(54) Title: DISPENSING APPARATUS

(57) Abstract

Apparatus (10) for dispensing toxic granular, pelletised, or particulate material to vermin such as rodents including a hollow pipe member (11) defining a reservoir for the material to be dispensed and arranged to be supported in a hole (15) in the ground and extend upwardly therefrom, an open topped container (12) supported coaxially on the pipe (11), and an aperture (16) in the wall of the pipe adjacent to the container (12) so that toxic material may pass therethrough into the container and a cover (13) supported coaxially on the pipe (11) and extending over the container (12) to shield the container (12) from adverse weather conditions such as rain.



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"DISPENSING APPARATUS"

THIS INVENTION relates to dispensing apparatus and particularly to apparatus for dispensing particulate, granular or pelletised material, for example granular substances toxic to vermin such as rats.

BACKGROUND ART

Rats, mice and other vermin can cause considerable damage in standing crops and therefore it is desirable to have an efficient means for exterminating such vermin. Whilst toxic substances in granular or pelletised form are well known, care must be taken in the manner in which such substances are used. For example, whilst the toxic substances can be simply scattered on the ground they can present a hazard to children, domestic animals and birds and furthermore such substances if used in the above manner are then exposed to weather conditions and may be rendered ineffectual by rain. Whilst dispensers have been proposed for the purpose of dispensing granular toxic and other substances, most known dispensers are not suitable for use in agricultural applications say in a field where crops are grown as they are not easily locatable and therefore are liable to be damaged by agricultural implements or cause damage to such implements. Furthermore, such known dispensers have not proved to be particularly efficient or safe in use.

The present invention aims to overcome or at least alleviate some of the above disadvantages by providing improved dispensing apparatus particularly suited to the dispensing of granular particulate or pelletised material. The present invention is particularly applicable to the dispensing of toxic substances for the extermination of rats or other vermin and may be used in any location where a safe and reliable operation is desired such as in a field amongst crops. The dispenser of the present invention also is preferably constructed in such a manner as to be easily visible in use and to

include a relatively large reservoir for granular materials to thereby reduce the frequency of refilling.

DISCLOSURE OF INVENTION

With the above and other objects in view, this invention resides broadly in apparatus for dispensing granular, pelletised or particulate material or the like, said apparatus including an elongated hollow member defining a reservoir for material to be dispensed, container means supported on said hollow member and communicating with the interior thereof whereby material within said hollow member may pass into said container, cover means supported on said hollow member and at least partially shielding said container and means associated with said apparatus and extending on the operative lower side of said container means for engagement with the ground so as to support said apparatus in upstanding attitude.

Preferably the elongated hollow member comprises a pipe and said container means and cover means are supported co-axially on said pipe. Preferably also said container means includes an open trough portion extending around its periphery to catch any spill-over of material from said container. Preferably also, said container communicates with the interior of said hollow member through apertures in the wall thereof, said apertures being partly or fully closeable to restrict communication between said container means and the interior of said hollow member. Suitably said container means is of dish like form and said cover means is of inverted dish like form. Preferably also a water receptacle is associated with the apparatus to attract vermin to the apparatus. Suitably said water receptacle may be formed integrally with the cover means and defined by a peripheral lip thereon. Preferably water reservoir means, suitably in the form of pipe members, are secured to said hollow member to supply water to the receptacle.

BRIEF DESCRIPTION OF DRAWINGS

5 In order that the invention may be readily understood and put into practical effect, reference will now be made to the accompanying drawings which illustrate a preferred embodiment of the invention and wherein:-

Fig. 1 is a perspective view of the apparatus according to the present invention;

10 Fig. 2 is an elevational view of the dispensing apparatus supported in an operative attitude;

Fig. 3 is a partly cut away sectional view of the apparatus illustrated in Figs. 1 and 2;

15 Fig. 4 illustrates details of one form of feed closure mechanism for the dispensing apparatus.

BEST MODE FOR CARRYING OUT THE INVENTION

20 Referring to the drawings, the dispensing apparatus 10 of the present invention in a first preferred form includes an elongated hollow member 11, in this instance formed of PVC pipe having supported coaxially intermediate its ends, an open topped container or tray 12 for dispensed material and a weather cover 13 which is supported coaxially above the tray 12 and adjacent thereto so that the container 12 is shielded from external weather conditions such as rain. As shown in Fig. 2, both the container 12 and cover 13 are spaced 25 from the operative lower end 14 of the member 11 so that the lower end 14 may be located in a hole 15 in the ground so that the apparatus may be supported stably in an upstanding attitude with the container 12 adjacent to the ground surface. A plurality of apertures 16 are formed in the wall of the hollow member 11 adjacent the container 12 and the member 11 is closed off adjacent to the apertures 16 as by a plug 17 so that the area 30 above the plug 17 defines a reservoir for material to be dispensed into the container 16. A removable cap 18 is 35 provided at the upper end of the member 11 so that the interior of the member 11 may be filled with the material

to be dispensed, this material being directed through the apertures 16 into the open container 12 so as to be accessible to vermin such as rats. Preferably the container 12 is provided with a further rim portion 19 which may be defined by the rim of a further larger diameter container secured co-axially to the container 12 to define an annular trough 20 to catch any spill over of material from the container 12 so that possible poisoning of domestic or farmyard animals is reduced or eliminated. Alternatively the outer edge of the container 12 may be provided with an integrally formed peripheral gutter portion for this purpose.

As shown, the cover 13 which is of inverted basin like form, is located adjacent to the container 12 and extends thereover so as to shield the container 12 say from rainwater which may otherwise cause deterioration of the material therein. The cover 13 may be either fixed in position or be slidable along the member 11 so that in the latter situation when the apparatus 10 is desired to be transported from one location to another, the cover 13 can be slid down over the container 12 to prevent escape of material therefrom. Alternatively, when the cover 13 is in a fixed attitude, an apertured sleeve 21 (see Fig. 4) may be provided co-axially about the member 11 to surround the apertures 16 therein. The sleeve 21 is in close sliding engagement with the member 11 so that the feed apertures 16 may be closed, fully open or only partly open by simple rotation of the apertured sleeve 21 to a desired position, say where the apertures therein are misaligned, aligned or only partly aligned with the apertures 16. Thus where it is required to remove or transport the apparatus 10 in this instance, the apertures 16 may be simply closed off by rotation of the sleeve 21 to prevent spillage. Of course, many other suitable closure arrangements will be apparent to persons skilled in the art.

So that vermin are attracted to the area of the dispensing apparatus 10 either before or after eating the toxic substances dispensed therefrom, a water receptacle is mounted on the apparatus so that 5 where the toxic substances cause say rats to have an increased thirst, they will remain in the area of the dispensing apparatus 10 rather than being attracted to a water supply for example within a house. Such a water receptacle may be a separate receptacle of similar 10 form to the feed container 12 and mounted coaxially on the support member 11 above the cover 13. Alternatively the water receptacle may be formed integrally with the cover 13. For this purpose, the cover 13 is preferably provided with a raised rim 13' about its periphery so 15 as to define a water receiving space 22.

Water is preferably supplied to the space 22 by means of a pair of reservoirs which in this instance comprise further elongated pipe members 23 secured releasably to opposite sides of the hollow support 20 member 11 by respective clips 24. Each pipe member 23 may be permanently closed at its upper end by a cap 25 and provided with a removable cap 26 at its lower end preferably screw engaged with the pipe member 23. Each cap 26 is provided with an aperture 27 therein so that 25 the level of water in the receptacle may be varied by altering the relative vertical positioning of the aperture 27 by either screwing in or screwing out the cap 26. In this embodiment, two water reservoirs are provided for stability purposes, however, only one 30 reservoir is necessary. When it is desired to fill the pipe members 23 with water, they are simply unclipped from the support member 11, the caps 27 at the lower end thereof removed and the pipe members 23 filled with water after which the caps 26 are re-engaged and 35 screwed fully in to close off the apertures 27. The pipe members 23 may then be clipped onto the support member 11 and the caps 26 unscrewed to the required extent.

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to fill the space 22 with water. In use, the desired position for location of the dispensing apparatus is selected and a vertical hole dug in the ground, for example with a hand auger, with the hole being preferably of such a diameter as to closely receive the lower end 14 of the apparatus and being of such a depth that the container 12 will sit flat on the ground surrounding the hole. The hollow support member 11 may be filled with the material to be dispensed by simply removing the end cap 18 whilst the water reservoirs 23 are filled in the above described manner.

The apparatus is set up such that there is just enough clearance under the downwardly directed side wall of the cover to permit rats and mice to have access to the material in the container 12. The lower rim of the cover may be spaced relatively closely to the ground so that rats and mice can dig underneath the cover and the spacing between the container 12 and cover 13 is such as to prevent small animals such as pets and birds from gaining access to the container and bait therein but is sufficient to allow access by rats and mice.

When the apparatus is set up as above, the sleeve or collar 21 is rotated so as to open the apertures 16 and permit the material to pass into the container 12. The caps 26 may also be unscrewed to the desired extent so that water will pass into the receptacle 22. Where it is necessary to change location of the apparatus, the water tubes 23 are preferably unclipped from the member 11 and the sleeve or collar 21 rotated to close off the apertures. The apparatus may then be removed from the ground and the water tipped out of the receptacle 22 and the toxic material in the container tapped into a bucket or the like. The apparatus can then be resited in the above manner. Preferably the components of the apparatus are formed of plastics material, for example the support pipe 11 and water reservoirs 23 may

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be formed of conventional PVC pipe with the cover 13 and container 12 formed of vacuum formed sheet plastics material. Plastics material will ensure against damage being caused in the event of an agricultural implement 5 passing over the apparatus whilst the upstanding nature of the apparatus will enable it to be easily located in higher grass or crop areas if left in the field by mistake.

Of course the water reservoirs 23 may be 10 secured to the hollow support member 11 in any suitable fashion and may if desired be fixed to the support member 11.

While the above has been given by way of 15 illustrative example only, many modifications and variations as would be apparent to persons skilled in the art may be made thereto without departing from the broad scope and ambit of the invention as herein set forth and defined in the following claims.

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CLAIMS

1. Apparatus for dispensing granular, pelletised or particulate material or the like, said apparatus including an elongated hollow member defining a reservoir for material to be dispensed, container means supported on said hollow member and communicating with the interior thereof whereby material within said hollow member may pass into said container, cover means supported on said hollow member and at least partially shielding said container, and means associated with said apparatus and extending on the operative lower side of said container means for engagement with the ground so as to support said apparatus in upstanding attitude.
2. Apparatus according to Claim 1, wherein said container means and cover means are supported coaxially on said elongated hollow member and wherein said container is adapted to communicate with the interior of said hollow member through at least one aperture in the wall thereof.
3. Apparatus according to Claim 2, and including means associated with said hollow member adjacent said aperture for selectively varying the extent of opening of said aperture.
4. Apparatus according to Claim 1, wherein said container means comprises a first open topped container and wherein said cover means is in the form of an inverted open topped container of greater diameter than the diameter of said first container.
5. Apparatus according to Claim 4 wherein said first container includes trough means extending around the periphery thereof and adapted to catch spillover of material from first container.
6. Apparatus according to Claim 1 and including water receptacle means supported on said hollow member and there being provided reservoir means for supplying

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water to said receptacle means.

7. Apparatus according to Claim 6, wherein said reservoir means includes at least one further elongated hollow member releasably engaged with the first said hollow member, said further member being adapted to contain water, and there being provided outlet aperture means for said water at the operative lower end of said further member.

8. Apparatus according to Claim 7, wherein said outlet aperture means are formed in a cap releasably engaged with the said lower end of said further member.

9. Apparatus according to any one of Claims 6 to 8, wherein said cover means includes an upstanding peripheral rim portion on the operative upper side thereof said rim portion defining said water receptacle.

10. Apparatus according to Claim 1 wherein said container means and cover means are spaced upwardly from the operative lower end of said hollow member, said lower end comprising said engagement means and being locatable in a hole in the ground to support said apparatus in an upstanding attitude.

11. Dispensing apparatus substantially as hereinbefore described with reference to the accompanying drawings.

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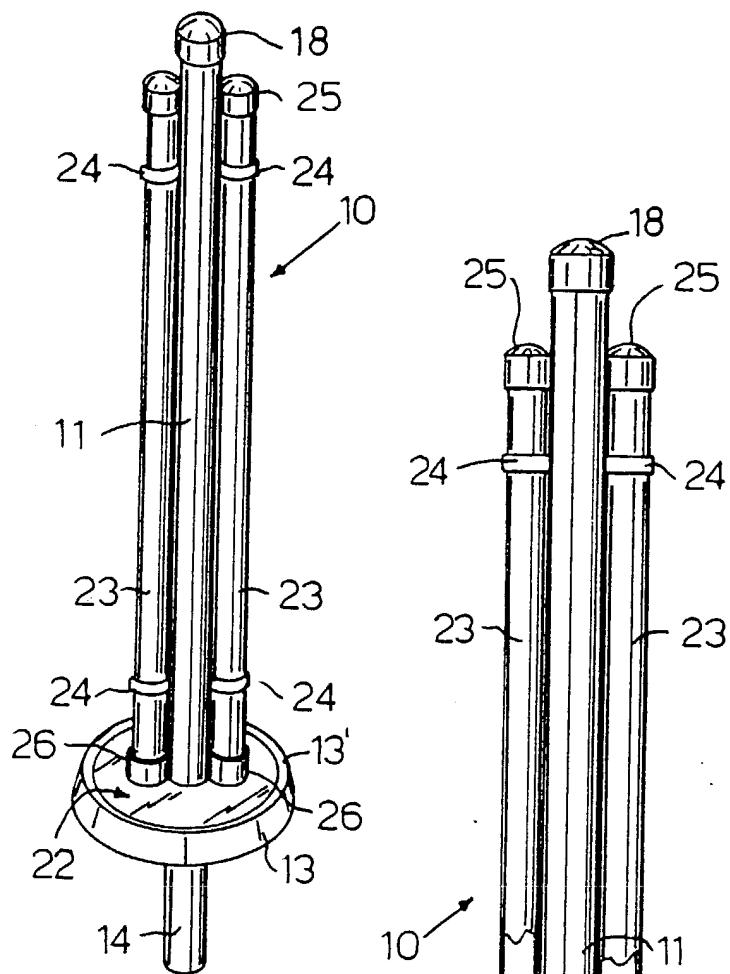


FIG.1

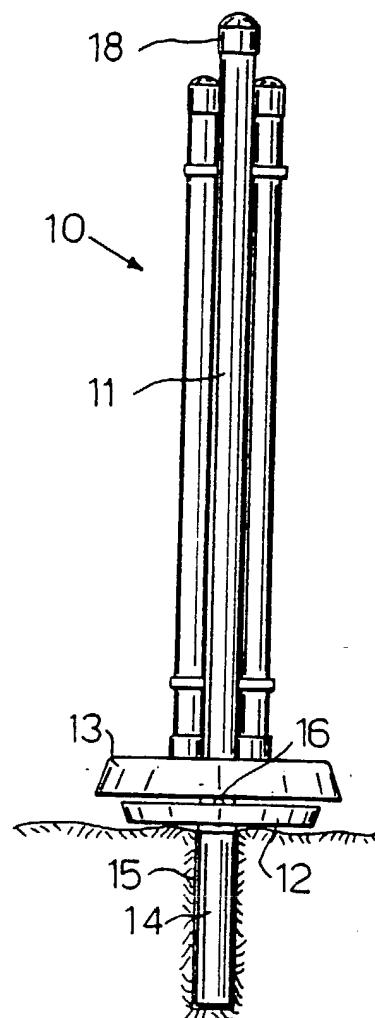


FIG.2

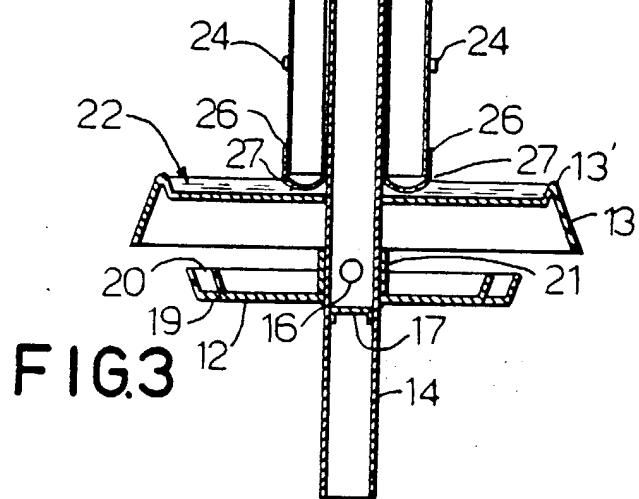


FIG.3

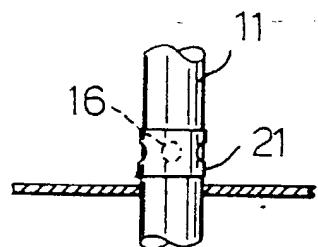


FIG.4

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INTERNATIONAL SEARCH REPORT

International Application No PCT/AU 85/00281

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) *

According to International Patent Classification (IPC) or to both National Classification and IPC

Int. Cl. 4 A01M 25/00

II. FIELDS SEARCHED

Minimum Documentation Searched *

| Classification System | Classification Symbols |
|-----------------------|------------------------|
| IPC | A01M 25/00 |

Documentation Searched other than Minimum Documentation
to the Extent that such Documents are Included in the Fields Searched *

AU; IPC as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT *

| Category * | Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹² | Relevant to Claim No. ¹³ |
|------------|--|-------------------------------------|
| X | US,A, 2725666 (MULLEN) 6 December 1955 (06.12.55) | 1,4 |
| X | US,A, 2725664 (MULLEN) 6 December 1955 (06.12.55) | 1,4 |
| X | US,A, 2725663 (MULLEN) 6 December 1955 (06.12.55) | 1,4 |
| X | US,A, 2690028 (MULLEN) 28 September 1954 (28.09.54) | 1,4 |
| X | US,A, 2664663 (MULLEN) 5 January 1954 (05.01.54) | 1,4 |
| A | US,A, 1443287 (SNYDER, SHORT) 23 January 1923 (23.01.23) | |
| A | GB,B, 2023987 (ARRIGONI) 9 January 1980 (09.01.80) | |
| A | AU,A, 16495/76 (EASTERBROOK) 2 August 1976 (02.08.76) | |
| A | AU,B, 225102 (PLEYTE) 17 April 1958 (17.04.58) | |
| A | FR,B, 2031712 (EURODÉCOR) 20 November 1970 (20.11.70) | |

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IV. CERTIFICATION

Date of the Actual Completion of the International Search

14 February 1986 (14.02.86)

Date of Mailing of this International Search Report

(28-02-86)

28 FEBRUARY 1986

International Searching Authority

Australian Patent Office

Signature of Authorized Officer

Colin James A. TARRANT

FURTHER INFORMATION CONTINUED FROM THE SECOND SHEET

A FR,B, 1144028 (BOURGETEL) 8 October 1957 (08.10.57)

A DE,A, 1939409 (HEIMBRUCH) 4 March 1971 (04.03.71)

A CH,A, 434861 (WUNDERLIN) 14 October 1967 (14.10.67)

A CH,A, 342782 (STUBI) 15 January 1960 (15.01.60)

A CH,A, 290804 (BEER) 17 August 1953 (17.08.53)

A CH,A, 219068 (BASSET) 16 July 1942 (16.07.42)

V. OBSERVATIONS WHERE CERTAIN CLAIMS WERE FOUND UNSEARCHABLE

This international search report has not been established in respect of certain claims under Article 17(2) (a) for the following reasons:

1. Claim numbers because they relate to subject matter not required to be searched by this Authority, namely:

2. Claim numbers because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claim numbers because they are dependent claims and are not drafted in accordance with the second and third sentences of PCT Rule 6.4(a).

VI. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING

This International Searching Authority found multiple inventions in this International application as follows:

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims of the international application.

2. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims of the international application for which fees were paid, specifically claims:

3. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claim numbers:

4. As all searchable claims could be searched without effort justifying an additional fee, the International Searching Authority did not invite payment of any additional fee.

Remark on Protest

The additional search fees were accompanied by applicant's protest.

No protest accompanied the payment of additional search fees.

ANNEX TO THE INTERNATIONAL SEARCH REPORT ON
INTERNATIONAL APPLICATION NO. PCT/AU 85/00281

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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END OF ANNEX

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